

axially and radially extending blade means formed on an outer radial periphery of said impeller for driving fluid from said inlet toward said outlet as said impeller rotates about said axis of rotation; and

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a generally ring shaped side channel portion formed by a flow channel formed in each of said housing and cover portions ~~[in at least one of said first and second side walls of said casing]~~ at least one of said flow channels defining a flow path between said fluid inlet and said single fluid outlet, and said side channel portion tapering on a constant slope axially inward along substantially all of its length toward said impeller from said fluid inlet to said single fluid outlet for reducing the cross-sectional area from said first cross-sectional area to said second cross-sectional area by from about 10% to about 50% and directing fluid back into contact with blade means as said impeller rotates.

REMARKS

Applicant respectfully requests reconsideration of the Examiner's rejection in view of the foregoing amendments and the remarks set forth below.

The Examiner has rejected claims 1-4, 6, 9, 11, 13, 15-17, 19 and 20 under 35 U.S.C. Section 102(b) over "French" Patent No. 876,285. Applicant believes the Examiner's Reference No. 876,285 only corresponds to German Patent No. 876,285. A translation of this patent is enclosed herewith.

While the Examiner has stated that the French patent discloses an impeller located between two radially separable walls of a regenerative type fuel pump, it is respectfully submitted that this is not the case. As set forth in the translation, an impeller side is shown in Figure 5, showing a vane (b) where the reference (a) refers to the impeller. A second surface or housing includes a semi-circular channel (d) therein.

Thus, the impeller portion half (a) moves on the shaft to form a circular flow from the semi-circular channel (d). In the present invention, channels are formed in the impeller housing and impeller cover on either side of an impeller. The impeller of the present invention is an open ended type, which includes radially opened and extending ends. It does not include the semi-circular configuration disclosed for the propeller blades in the German 876285 reference. This has been further defined in the claims, stating that a channel portion is formed axially on either side of the propeller blade. In the present invention, a new type of channel configuration is formed to be utilized in such an open ended type means. The references, taken alone or in combination, do not specifically teach such each and every claimed feature, as required under 35 U.S.C. Section 102(b), each and every feature of the present invention as claimed. Nor do they render the subject invention obvious, as set forth in the amended claims.

The impeller in the German reference is an integral unit. It consists of a housing having a semi-circular cross-section. Thus, the German reference does not teach or suggest an open ended type impeller with channels on either side of the impeller. Therefore, it would not be obvious to provide such a structure as set forth in the present invention. There is no teaching to suggest that the principles of the German reference would be applicable to an open ended blade structure such as that of the present invention. In the present invention, an impeller housing and an impeller cover form a circular channel, by which fluid flows through the vanes of the impeller, which is in contradistinction to the subject German reference. Thus, as set forth in the subject specification, page 22, small variations in the axial taper of the impeller (2,4 mm) create very good improvements in performance. In the German reference, it shows that a very dramatic taper is required for a single channel closed vane system.

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It is respectfully submitted that the claims, as amended, are patentably distinguishable because the references, whether taken alone or in combination, do not teach, suggest or render obvious, the present invention. Therefore, applicant submits that the pending claims are properly allowable, which allowance is respectfully requested.

The Examiner is invited to telephone the applicant's undersigned attorney at (248) 627-1133 if any unresolved matters remain.

Please send all future correspondence relating to this application to Warn IP Law Office, P.O. Box 70098, Rochester Hills, MI 48307.

Respectfully submitted,

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Enclosures